

APPLICATION FOR LETTERS PATENT

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Title : CARRIER AND METHOD

Claims : 34

Drawings : 8 Sheets

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CARRIER AND METHOD

This invention relates to carriers, and manufacturing methods, and particularly to hand-held carriers and methods used in carrying and distributing foods, including beverages, and other objects such as cylindrical or other containers, and further relates to advertising means and methods using such carriers and methods.

This patent application is a continuation-in-part of U.S. patent application Serial No. 10/213,938 filed August 9, 2002.

A problem of long standing is that of distributing food from distribution stands, stores, restaurants, etc., to people to carry to a distant site at which the food is to be eaten. It is difficult for one to carry much more than one or two beverage cups, or one cup and one item of solid food, if only the hands are available for use in carrying the food.

Food carriers are used when more substantial quantities of food must be carried. However, because the carriers must be relatively low in cost, they usually are

relatively flimsy and are easily deformed to cause the food to spill from the carrier.

One type of prior carrier has a pair of foldable trays secured to a central support panel with a hand-hold used for carrying the device. The trays have beverage-receiving holes for use in carrying up to four full beverage cups. An auxiliary tray with a long slot in the bottom is fitted onto the central support panel with the panel extending through the slot. The auxiliary tray typically is used for holding solid foods such as hot dogs. The auxiliary tray can rest upon the tops of the beverage containers below it. The carrier thus can be used to carry food and beverages for several people.

The foregoing type of carrier has several disadvantages.

One disadvantage is that several different motions are required in order to unfold the flattened carrier and prepare it for use. This makes the carrier relatively slow and intricate to use.

Another disadvantage is that the container often will not stand up on a horizontal surface by itself. This makes it more difficult and slower to load the food into the carrier.

It has been suggested that such carriers be used to carry advertising for sponsors who supply the carriers. By doing this the relatively higher costs of the carriers are paid by advertisers. Thus, it is desirable to maximize the surface area available for such advertising without excessive increases in cost.

Accordingly, it is an object of the invention to provide a food carrier and method which eliminate or alleviate the foregoing disadvantages.

In particular, it is an object of the invention to provide a food carrier which is relatively quick and easy to unfold and set up, and thus speeds the food distribution process.

It is another object to provide such a carrier which is relatively sturdy and easy to load and unload, thus further speeding and smoothing the distribution of food.

It is a further object to provide such a carrier with an increased surface area for displaying advertising.

It is an additional object to provide a carrier which is relatively economical to make, and is sturdy and reliable in use.

In accordance with the present invention, the foregoing objects are met by the provision of a food carrier and method having a central support panel with folded trays on opposite sides, each of the trays consisting of a folded side-wall structure which unfolds to provide a side wall, and a folded horizontal support panel which unfolds to fit into the side wall and hold it. This structure holds the carrier erect when positioned on a flat surface, and greatly facilitates the loading of food into the carrier.

In one specific embodiment, the horizontal panel has at least one holding hole for receiving and holding a beverage cup.

Although the specific embodiment described immediately above is good for holding tapered beverage cups whose upper portion will engage with the edge of the hole to hold it in the carrier, another embodiment preferably is used for carrying non-tapered containers, such as cylindrical beverage cans and bottles, and similarly shaped articles. In this embodiment, the trays or receptacles have flat bottoms without holding holes to support the objects. Preferably, the carrier also has retractable side barriers to support upright containers to sit

upright on the flat bottom and prevent the containers from tipping sideways.

A holding structure preferably is provided to hold the horizontal panel relative to the side wall to support the load to be carried.

In one embodiment, the holding structure comprises a projecting surface extending inwardly from the side wall so as to support the horizontal panel and any food resting on that panel. In another embodiment, the holding structure includes a tab on one of the parts which engages the other part.

Preferably, the horizontal panel is structured so as to automatically enter the confines of the side wall when the side wall is unfolded so that the carrier is unfolded and set up for use in a single motion.

Preferably, the horizontal panel is located adjacent the bottom edge of the wide wall.

In another embodiment of the invention, in each tray there are two vertically spaced-apart horizontal panels connected to one another, each having at least one beverage-receiving hole aligned with a similar hole in the other panel to support and hold a beverage container.

An optional auxiliary tray is provided. It has a slot in the bottom through which the central panel is inserted. This tray can be used to hold solid food items, with the tray resting on either the tops of beverage containers held in the trays, or on the upper edges of the side-walls.

In another embodiment, the auxiliary tray has the same construction as the main carrier except that its trays have no beverage cup holes and it has a central recess which fits over the central support panel of the carrier. This auxiliary tray can be used independently as a solid food carrier.

In the embodiment having a flat bottom for supporting cylindrical containers, etc., and which has one or more retractable side barriers, the barriers serve as dividers to divide each receptacle of the carrier into two different compartments. One or both compartments can be used to carry beverage cans or bottles, or one compartment for cans or bottles and the other for solid foods or other objects.

The carrier is relatively quick and easy to use. The food server prepares the food to the customer's order. Then, he or she merely unfolds the side-wall structure and places the carrier on a flat surface. Then the server loads the carrier

with food. Because the carrier stands erect on its own, the server can use both hands to load the food into the carrier.

If the order is only for liquid foods, such as soup or beverages, the beverage-containing cups are inserted into the receiving holes in the trays, or placed on the flat bottom wall of the receptacles, and the carrier is grasped by the handle and carried away by the customer.

If the order also includes solid foods, such as hot dogs, hamburgers, bags of peanuts, potato chips, popcorn, etc., then the auxiliary tray is slipped downwardly onto the central support panel, the solid food is placed in the auxiliary tray, and the customer grasps the handle and carries all of the good items away with one hand.

If the order includes only solid food items, they can be placed in the carrier trays, as long as they are large enough not to pass through the beverage-receiving holes.

In the embodiment having flat bottomed receptacles with optional retractable side barriers, virtually any type of beverage container can be carried, whether tapered cups, cylindrical cans or bottles, or other shapes. Food can be

carried side-by-side with beverages by use of the pop-up side barriers to prevent the beverages from tipping over.

Alternatively, the solid food items can be carried in one of the auxiliary trays described above.

Food distribution using the carriers of the invention is made faster and easier, both for the servers and the customers, in many different types of events and locations. For example, the carrier can be used to advantage in distributing food from concession stands in baseball, football, tennis and other stadiums; in basketball and other indoor sports arenas; at picnics, indoor and outdoor political and other meetings, and conventions; at self-serve or other carry-out restaurants; at parties and other social gatherings, and at virtually any function or location where food must be carried by the consumer.

Advantageously, the carrier bears the advertisements of one or more sponsors who either supply the carriers for free or defray some of their cost. The advertising can include tear-off coupons good for credit against the purchase of merchandise in order to promote the sale of the merchandise.

Advantageously, the carrier of the present invention has an increased exterior surface area for displaying such advertising.

A notable increase in the available advertising space is created by the construction feature in which the central support panel structure consists of a single panel folded in the middle to form a hinge between the two panels formed by the fold, with a foldable receptacle secured to each of the separate panels. Advertising is printed on the inside facing surfaces of the two panels. A message is displayed on the outside of the carrier advising the user about the interesting materials to be seen by swinging the two halves of the carrier apart.

Advantageously, the carrier can be formed from a single paperboard sheet or blank which can be scored to form separation lines and fold lines. The central support panels, and the foldable receptacle side and bottom walls are all hinged together. The blank advantageously has one surface which is finished and suitable for high quality printing. Preferably, all of the advertising material can be printed on the one surface in one printing operation. Then, the parts are separated along the separation lines, and folded along the fold

lines, with selected panels being glued together in selected locations, to form the final folded carrier product.

The foregoing and other objects and advantages of the invention will be apparent from or explained in the following description and drawings.

IN THE DRAWINGS:

Figure 1 is a perspective view of one embodiment of the food carrier of the present invention;

Figure 2 is a cross-sectional, partially broken-away view taken along line 2-2 of Figure 1, with modifications to illustrate the operation of the invention;

Figure 3 is a front elevation view of the base portion of the carrier of Figure 1 folded flat;

Figure 4 is a top plan view of a tray of the carrier base shown in Figure 3, with the tray shown partially unfolded;

Figure 5 is a top plan view like that of Figure 4 with the tray fully unfolded;

Figure 6 is a top plan view of the folded auxiliary tray of the carrier shown in Figure 1;

Figure 7 is a perspective view of another embodiment of the carrier of the invention;

Figure 8 is a cross-sectional, broken away view taken along line 8-8 of Figure 7;

Figure 9 is a cross-sectional, broken away view taken along line 9-9 of Figure 7;

Figure 10 is a front elevation view of the folded up carrier base which is shown unfolded in Figure 7;

Figure 11 is a schematic side elevation view of a portion of the base shown in Figures 7 and 10 in partially unfolded form;

Figure 12 is a perspective view of another embodiment of the food carrier of the present invention;

Figure 13 is a cross-sectional, broken away view taken along line 13-13 of Figure 12;

Figure 14 is a top plan view of the cut form for one half of the carrier base shown in Figure 1;

Figure 15 is a top plan view of the cut form for one half of the carrier base shown in Figure 12;

Figure 16 is a perspective, partially cut-away and partially schematic view of another embodiment of the carrier of the present invention;

Figure 17 is a schematic view illustrating one manner of using the carrier of Figure 16;

Figure 18 is a rear elevation view of the inside surfaces of the structure shown in Figures 16 and 17;

Figure 19 is a cross-sectional, partially broken-away view taken along line 19-19 of Figure 16;

Figure 20 is a bottom plan view of a portion of the structure of Figure 16, with one of the receptacles partially folded;

Figure 21 is a schematic cross-sectional view illustrating structural features of the embodiment shown in Figures 16-20;

Figure 22 is a perspective, broken-away view of an alternative embodiment of the carrier shown in Figures 16-21; and

Figure 23 is a top plan view of a single blank used to make the embodiment of the carrier shown in Figures 16-21.

GENERAL DESCRIPTION

Referring first to Figure 1, the food carrier 20 of the present invention includes a central vertical support panel

22 made of two separate fiberboard panels 26 and 28 adhered together with adhesive to form a laminate.

Extending outwardly from opposite sides of the central panel 22 are two trays 30 and 32 for carrying beverages in up to four cups, such as the cup 62, or solid foods.

Also shown in Figure 1 is an optional auxiliary tray 70 with side walls 72 and 74 and a bottom wall 76 with an elongated central slot 78.

When the customer orders solid food as well as several beverages, the auxiliary tray 70 is fitted down over the central support panel 22 which extends through the slot 78, and the auxiliary tray 70 slides downwardly until it rests on top of the beverage cups or the upper edges 52 of the trays 30 and 32. A hand-hole 34 is provided in the central support panel 22 and the entire assembly can be carried from a concession stand to the seats in a stadium or the like by using only one hand inserted through the hand-hole 34.

When the customer returns to his or her seat, the customer removes the solid foods from the tray 70, slips the tray 70 off of the central support panel 22, and then removes

the beverages from the trays 30 and 32 to distribute to the people for whom the food was ordered.

Advantageously, both the base of the carrier, consisting of the central support panel 22 and the trays 30 and 32, and the auxiliary tray 70 fold flat for compact storage at the concession stand. As it will be explained in greater detail below, the base unit is particularly advantageous in that it can be unfolded very quickly and easily and stands erect on its own so that it can be loaded with beverages very quickly, thus enhancing the efficiency of the food servers using them.

Also in accordance with the present invention, the carrier has an enlarged surface area for the display of advertising by advertisers who buy and supply the carriers to the food vendors or distributors, thus maximizing the advertising value to the advertisers.

PREFERRED CARRIER BASE

The preferred carrier base shown in Figure 1 has a construction which makes the base relatively easy and quick to unfold, and yet enables it to stand erect on a horizontal surface to greatly speed loading food into it.

Referring now to both Figures 1 and 2, the tray 32 includes a vertical foldable side wall consisting of sections 40, 42 and 44 which extends from the panel 28 at one end, and is secured at the other end by adhesive to the panel 28 by means of a tab 54 extending outwardly from the panel 28 adjacent its bottom edge.

As it is shown most clearly in Figure 2, the panel 28 is bent along a fold line 52 to form a horizontal support panel 46 which is shaped and dimensioned so as to fit snugly into the outlines formed by the side wall structure to support the carrier in an erect position when resting on a horizontal surface. The horizontal panel 46 has two relatively large holes 48 and 50 shaped and sized to receive and hold beverage cups, such as the cup 62 which is shown in Figure 1 fitted into the opening 48.

Typically, the beverage cups are tapered so that they are slightly smaller at the bottom than at the top, and the holes 48 and 50 are dimensioned so as to hold the cup 62 with its upper rim 64 somewhere above the horizontal panel 46, but below the upper edge 52 of the tray 32.

The tray 30 on the other side of the central support panel 22 has a construction which is the mirror image of that shown for the tray 32. Thus, it has a side wall formed of sections 41, 43 and 45, and a horizontal support panel 47 with holes 49 and 51 for receiving beverages. Another tab 54 is used to secure the side wall to the panel 26 with adhesive or the like.

Figure 3 shows the food carrier base of Figure 1 when folded flat. Both of the side wall structures fold flat, each against its own side, and the horizontal panels 46 and 47 fold upwardly to lie flat against the central support panel 22.

When it is desired to unfold the carrier base, the food server merely inserts his or her fingers into the corners of the folded side walls and pulls in the direction indicated by the arrow 82 in Figure 4, and on the corresponding point in the other tray (not shown in Figure 4) to unfold the side walls and form the trays 30 and 32.

Referring now to Figures 2, 4, and 5, as well as Figure 14, extensions 58, projections 56 and 58, 88 and 100 extend inwardly from the bottom edges of the side wall to form a platform upon which the horizontal support panel 46 rests in

order to support the relatively heavy weight of multiple large cups filled with beverages.

As it is shown in Figure 4, the projections are shaped with circular cut-out areas 90 and 92 so as to align with the edges of the holes 48 and 50 when the tray is unfolded.

The projection from the long lateral side 42 has a fold line 86 at one end and a tab 84 which is adhesively attached to the projection 100 extending from the bottom edge of the panel 40.

The projections 56 and 58 are not secured to one another and the projection 56 slides over the top of the projection 58 during unfolding.

The projection 58 from the side wall section 44 has a fold line at 98 and a tab 96 extending underneath the horizontal support panel 46. Preferably, the tab 96 is adhesively secured to the panel 46 so as to provide a means for automatically pulling the panel 46 downwardly into the space between the side walls 40, 42 and 44 as the tray is unfolded.

Figure 5 shows the tray 32 when it is fully unfolded. The cut outs 90 and 92 align correctly with the holes 48 and 50,

and the projections around the periphery provide ample support for the horizontal panel 46.

Referring now to Figure 2, the outermost edge 55 of each panel 46 and 47 is positioned so that it preferably slightly frictionally engages the side wall 42 or 43 so as to hold it in place once it is fully rotated to its horizontal position. When the trays 30 and 32 are opened in the manner described above, the horizontal support panels 46 and 47 may not be unfolded all the way to the bottom of their respective trays. Instead, the panel is only partially depressed, to the position of panel 47 shown in Figure 2. This is not an impediment to fast filling of the carrier, and actually may assist in locating a beverage cup such as the one shown at 66 correctly through the opening 51 in the panel 47 and the bottom of the tray. Then, when the carrier is lifted up, the weight of the full drink cups will pull the panels 46 and 47 downwardly and seat them correctly, without any further effort by the food server.

Thus, a single unfolding motion by the food server is all that is necessary to set up the food tray for loading. The horizontal panels 46 and 47, even when they are in the angular position shown in Figure 2, hold the side walls to their desired

shape so as to hold the entire carrier erect when it is resting on a horizontal surface such as the surface 60 shown in Figure 2.

Figure 14 shows the fiberboard form 104 used to form one half of the carrier base. An identical form is provided to form the other half of the base, and the two vertical panels are adhered together with adhesive. The other panel portions are secured together, and the assembled unit is folded flat for shipment to the customer.

Figure 6 shows the auxiliary tray 70 folded flat along fold lines 102. It is a very simple matter to grasp the end panels 72 and pull them apart to erect the auxiliary panel when it is desired to use an auxiliary panel. Of course, it should be understood that the auxiliary tray 70 also can be used by itself to carry solid foods. Although it usually is too flexible to safely carry beverages, it can be used to carry one or possibly two beverages, but with difficulty. It is far better and safer to use the carrier base to carry beverages.

The carrier base construction makes it strong and easily able to support the heavy weight of multiple full cups of beverages, as well as solid foods piled into the auxiliary tray

70. This is particularly so because of the folding vertical side wall construction with the horizontal support panels which hold the side walls in the desired shape.

Although it is preferred that the carrier base be used for carrying beverages, there is no reason why it cannot also be used to carry solid food items, such as hot dogs and hamburgers, if they are large enough so that they will not fall through the holes in the bottoms of the trays.

In fact, a version of the carrier base shown in Figure 1 is shown in Figure 12, without holes in the bottoms of the trays. That version is particularly good for carrying either large or small solid food items. This construction will be described in greater detail below.

MULTI-LEVEL CUP CARRIER

Figure 7 shows an alternative embodiment of the base of the carrier of the present invention. The construction of the carrier base 106 shown in Figure 7 is largely the same as that shown in Figure 1, and the same reference numerals are used for corresponding elements in both Figures of the drawings.

Two trays 107 and 109 are secured adjacent the bottom edge of the central support panel 22. The tray 107 has a side

wall with panels 40, 42 and 44, as described above. Similarly, the tray 109 has a side wall formed of panels 41, 43 and 45, also as described above.

As it is shown in Figure 9, the tray 107 is formed by the side wall in combination with an extension comprising panels 110, 112, 114 and 116 extending from the bottom of the panel 28 and folded as shown in Figure 9 to form a rectangular structure 108. The rectangular structure is adhesively secured to the panel 28 by adhesive applied to the end section 116.

An upper opening and a lower opening are provided in order to support each beverage cup. The side support provided by two separate spaced locations bearing upon the sides of the cup helps to increase the stability of the cup as it is being carried.

The folding structure 108 thus described is secured to the side walls by a pair of tabs 134 cut from the material of the panel 112, as shown in Figure 8, so as to form the tabs. These tabs fit into notches 136 cut into the edges 42 and 43 of the side wall portions of the construction.

The carrier base shown in Figure 7 is shown folded flat in Figure 10. The structure 108 shown in Figure 9 is

folded upwardly to the position shown in Figure 10, and the side wall portions are folded to the left, as shown.

In unfolding the carrier base, the food server merely pulls on opposite corners of the side walls, as in the Figure 1 embodiment, and the springiness of the fiberboard causes the structures 108 to rotate partially downwardly to the position shown in Figure 11, thus causing the side walls to hold a rectangular shape and support the carrier base in an upright erect position to facilitate the loading of the carrier.

The extra openings 118, 122, 126 and 130 formed in the upper wall of each tray helps to stabilize the beverage containers when they are resting on a horizontal surface waiting for the carrier to be lifted upwardly.

When the carrier is lifted upwardly, the weight of the beverage cups pulls the structures 108 downwardly and causes the extending tabs 134 to be seated in the notches 136 in the side wall portions 42 and 43 so as to lock the cup holding portions 108 to the side walls to form a strong and sturdy carrier.

Alternatively, instead of the tabs 134 and notches 136, folding projections such as projections 56, 58, 80, 88 and

100 shown in Figures 2-5 can be used as shown in the embodiment of Figure 1 to support the structures 108 from the bottom.

Although it is not shown in Figure 7, it should be understood that an auxiliary tray 70, such as that shown in Figures 1 and 6, also can be used with the carrier base shown in Figure 7, in the manner described above with respect to the Figure 1 structure.

Figure 15 shows the unfolded parts used to form the carrier base shown in Figure 7. Again, the parts necessary to make only one half of the carrier base are shown, and identical parts would be used to form the other half.

The side wall portion is formed by a strip 146 which is separate from the remainder of the structure, although it could be formed as an integral extension of that structure in the manner of the embodiment shown in Figure 14, if desired.

The strip 146 has end portions 150 and 154 which are secured to the panel 28 adjacent its bottom edge at the fold line 148.

PIGGYBACK CARRIER

Figure 12 is a perspective view of another food carrier 140 of the present invention. This carrier consists of

a base portion which is the same as the base portion shown in either Figure 1 or Figure 7, together with an auxiliary tray 141 which is almost identical in construction to the base portion of the unit shown in Figure 1, except that there are no cup-receiving holes in the horizontal support panels 46 and 47.

Additionally, the two halves of the auxiliary carrier 141 are formed from a single blank or two separate parts are secured together at the top edges, so that two panels 142 and 144 are draped over the top edge of the central support panel 22. The panels 42 and 44 have holes 34 positioned to be aligned with the hole 34 in the base unit so that a unitary hand-hole 34 is formed for the combined carrier.

The two panels 142 and 144 are not secured together so that the central support panel 22 of the base unit can fit readily into the opening between the panels 142 and 144.

Thus, the auxiliary carrier 141 rides "piggyback" on the base unit.

The auxiliary carrier 141 has separate utility. When a customer orders only solid foods, or whenever the lack of beverage-receiving holes is not a detriment, the carrier 141 can be used alone. Thus, improved carrying of solid foods as well

as liquids is provided. Alternatively, the auxiliary carrier 141 can have beverage-cup receiving holes so as to provide extra beverage carrying capacity.

The height of the auxiliary unit 141 should be selected so that it allows ample room for the cups held in the cup receptacle openings in the base unit to extend a reasonable distance above the bottom of the base unit.

FLAT OR "SOLID"-BOTTOM CARRIER

Figures 16 through 23 illustrate flat or "solid"-bottom embodiments of the carriers of the present invention.

Referring to Figure 16, the carrier 160 shown there has a vertical central support panel structure 162 and two fold-out flat or "solid"-bottom receptacles 164 and 166 which are shown in their unfolded positions. As with the other embodiments of the invention described above, the receptacles 164 and 166 fold flat against the central panel structure 162 to minimize storage volume.

A hand hole is provided at 214 with foldable tabs 216 extending into the hole. When the tabs 216 are folded over by the insertion of a hand into the hole, they partially cover the

upper edges of the hole so as to provide a smoother, broader surface to make the carrier more comfortable to carry.

An auxiliary slotted bottom tray, indicated in dashed lines schematically at 70 in Figure 16, also can be used to hold additional items, in the manner described above in connection with the other embodiments of the invention.

The receptacles 164 and 166 differ from those shown above in Figures 1-15 in that the bottom of each receptacle is flat and "solid"; that is, it has a bottom panel structure which is flat and, in one form, is without large holes, and on which containers or other objects can rest, such as the cylindrical beverage container can 218 shown in Figure 16. Such containers, being cylindrical, are not tapered and will not jam themselves into holes in the bottom of the receptacles like the other embodiments described above. Thus the carrier 160 can be used to carry cylindrical or other-shaped containers, as well as tapered containers, as it will be described more fully below.

Each of the receptacles has a folding side wall structure including three side walls. Receptacle 164 has side walls 168, 170 and 172, and receptacle 166 has side walls 174, 176 and 178.

In addition, tabs 201 and 203 (see Figure 16 and well as Figure 23), are provided. Those tabs fit into corresponding slots near the bottom edges of the panels 172, and 174 when the receptacles are formed by the user, so as to hold each transverse panel 242 down when it is inserted into the side wall structure. By this means, the transverse panel holds the side wall structure in a rectangular shape and allows the carrier to sit upright on a horizontal surface, ready for having objects loaded into the receptacles easily and quickly.

The central support panel structure 162 actually consists of a single panel having two sections 204 and 206 (see Figure 19) folded at the top edge 208 of the carrier to form a hinge. Additional thicknesses of paperboard 210 and 212 are folded over onto the surfaces 204 and 206, respectively, in the upper half of those panels to reinforce the panel structure 162, and to provide a conveniently printable advertising display surface for both upper halves of the panel structure 162.

The solid bottom structure includes a transverse support panel 242 (see Figure 21) with a folded side extension 244, and a holding structure 186 (see Figure 20) to support the transverse support panel 242. The transverse panel 242 is

formed as an extension of one of the panels 204 at the bottom end, and is hinged at 199 (see Figure 16) to the bottom edge of the panel 204. A detailed description of these structures will be set forth below.

POP-UP SIDE BARRIERS

Referring now to Figure 16, in each of the receptacles is a divider structure generally indicated at 180, which, in the embodiment shown in Figure 16, includes a pair of pop-up or retractable side-barriers 182 and 184.

The pop-up side barriers 182 and 184 are formed as cutouts from the bottom portion of the panel 204 and of the transverse panel 242.

The structure 182 is shown in the "up" position to form a side-barrier to hold an object 218 such as a beverage can or bottle or cup in the compartment formed by the side barrier to prevent the object 218 from tipping over in the carrier.

The other side barrier structure 184 is shown in the "down" position, i.e., folded flat so as to permit solid food or other objects to be carried in the second compartment of the receptacle 164.

It should be understood that the structures of the bottom and pop-up barriers also are provided in the receptacle 166, but are not shown in the drawings completely in order to avoid redundancy.

The pop-up barrier structure 184 includes a first panel 196 hinged at its top edge to the panel 204, having a fold line at 198, and a semicircular cutout 195 to conform to the surface of a cylinder when it is popped up into barrier-forming position.

The structure 184 also has a fold line at 200, and at the front edge 197.

The structure 182 leaves a cutout hole 192 in the lower portion of the panel 204 when it is raised, and has a fold line 193 which allows it to be pulled or pushed upwardly through the hole in the bottom to the position shown in Figure 16.

Thus, when the carrier 160 is used, either one of the side barrier structures 182 and 184 may be raised to its upright position to form a cylindrical object-holding compartment. The other side barrier structure can be left unfolded as shown in Figure 16, so as to provide a compartment without a large opening in the bottom to better enable it to carry solid objects

such as hamburgers, hot dogs, popcorn, peanuts, potato chips, etc., or any other object fitting into the compartment, including relatively smaller items.

If desired, both side barriers 182 and 184 can be left unfolded so as to give a completely "solid" support bottom to hold objects in the receptacle. For example, if three beverage cans will fit side-by-side in the receptacle, they can be placed in the receptacle without raising the side barriers and they will support each other and prevent the others from toppling over.

ADVERTISING SPACE

Virtually all of the side walls and exterior panels of the carrier preferably bear advertising, since it is advertising which facilitates the provision of the carrier to the consumer at no cost, and at a moderate cost or no cost to the food purveyor. For example, advertising appears at 220 on the upper panel 210, on the sides such as at 222 and 224 (also see Figure 17).

In addition, advertising space advantageously is provided on the interior facing surfaces of the panels 204 and 206. This advertising is accessed by merely swinging the two

panels 204 and 206 apart at the hinge 208, as illustrated in Figure 17, to expose the interior surfaces of the panels as shown in Figure 18.

The surface 206 shown in Figure 18 carries advertising 226. Advantageously, a CD record 228 is attached to the panel 206, as a free gift to the consumer. It carries any desirable subject matter, such as recorded music, and, if desired, a commercial for the sponsor's product.

Preferably, on the outside surface of the carrier 160, a legend appears informing the user of the advertising and gifts appearing on the inside panels so as to urge the user to spread the panels apart to see what is there.

By this means, the effective advertising surface area of the carrier has been greatly augmented, at minimal cost.

It should be noted that the central panel structure 162 having two panels hinged along their upper edges is a construction which is usable with each of the different embodiments of the invention shown in this patent application. In fact, the upper tray 141 of the embodiment shown in Figure 12 actually has this hinged construction. Thus, advertising can be printed on each of the interiors facing surfaces of the central

panel structure, with the increase in advertising space noted above.

HOLDING PANEL STRUCTURE

Figure 20 shows the holding panel structure 186 of the bottom of the receptacle 166.

The bottom edge of the side panel 176 is folded over to form the broad long flap 230 to act as part of the holding panel structure. A corner area 240 of a first corner piece 238 is secured to a portion 246 of the bottom of the panel 242 with adhesive. A fold line is formed at 242. The corner piece 238 is formed as an extension of the lower edge of the side wall 178. (Also see Figure 23.)

Another corner piece 232 has a corner portion 234 secured to the flap 230 by means of adhesive. A fold line is provided at 236. The flap 232 is formed as an extension of the lower edge of the side wall 174. (See Figure 23.)

It should be understood that the bottom structure shown in Figure 20 has a trapezoidal shape rather than a rectangular shape because it is shown partially folded, with the portions 246 and 248 of the bottom panel 242 partially folded

inwardly, in the general position shown in Figure 21, and the corner pieces folded partially along the lines 242.

The corner pieces provide linkages which help to pull the panel 242 downwardly when the side walls are unfolded, and to strengthen the holding structure and the bottom of the receptacle.

The pop-up barriers for the receptacle 166 are shown, in part, at 250 and 252, with fold lines 254 and 256, and semi-circular cut-out edges 258 and 260. All of these parts are shown in their folded up position so they form part of a "solid" bottom.

The holding structure 186 amply supports the transverse panel 242 so as to form a strong bottom with convertible pop-up side barriers to separate it into two compartments.

By now it should be apparent that the term "solid" bottom refers to a bottom portion that has no large holes in the areas for supporting containers in contrast to those shown in the embodiments of Figures 1-15.

SINGLE BARRIER STRUCTURE

Figure 22 is a perspective view showing an alternative embodiment of the invention in which a single divider structure 270 is provided for one of the receptacles 262 of a carrier like that shown in Figure 16.

The structure has side walls 264, 266 and 268, and the structure 270 has a panel 272 with a fold line 273, and a vertical panel 274 when popped-up. Semi-circular cutouts are provided at 276 and 278 to provide lateral support for containers in either of the two compartments formed by the barrier structure 270.

Although the use of the single pop-up barrier structure or divider 270 in the "up" position commits both compartments to use with side barriers, the single structure 270 shown in Figure 22 can be advantageous in some uses.

SINGLE SHEET MANUFACTURE

Figure 23 is a top plan view of a single sheet 279 from which the carrier shown in Figures 16 through 21 can be manufactured.

Advantageously, the structure permits all graphic matter on the carrier to be printed by printing only one surface

of the sheet 279. Figure 23, in fact, shows in dashed outline, the recommended bleed boundaries for the printing process at 280.

The upper surface of the sheet 279 is treated by adding an acrylic finish to make it smoother than raw fiberboard, whereas the other side of the sheet is left raw. This gives the upper surface a better appearance, but saves the cost of coating both sides. The acrylic finish also makes the fiberboard stronger and more liquid-resistant.

The vertical panels are shown at 204 and 206, and the fold line between them is shown at 208.

Advertising is printed on each of the surfaces 210 and 212, 168, 170 and 172, 174, 176 and 178, and on each of the panels 204 and 206. Advantageously, this is all done in one printing operation, usually including two to four color separation printing steps, without the extra cost of turning the sheet over to print on the other side.

Separation lines are formed at 290, 292, 288, at the edges of the pop-up barriers, and elsewhere where separation is desired. Fold lines are provided at 208, 284 and 286, at the

junctions between the side panels 168, 170, 172, etc., and wherever else folds are to be made.

Then, the sheet 279 is sent to the automatic fabrication equipment in which scrap such as the panel 282 and other unneeded material is removed. The panels 210 and 212 are folded along lines 284 and 286 onto the surfaces of the panels 204 and 206 underneath the ones shown in Figure 23. Adhesive is applied to the panels 210 and 212 and they are adhered to the panels 204 and 206.

The side wall structures are folded and secured at the left edge to the tab 205 or 207 with adhesive to complete the foldable side wall structure. The corner tab portions 232 and 240 are folded and adhered to the surfaces to which they must adhere, and the side wall structures are folded flat against the central panel structure 162.

It should be noted that the side walls of the carrier shown in Figure 16 are somewhat higher than the side walls of other carriers shown above in this patent application. Although the height of the side walls can be varied as needed, if the objects stored in the receptacles do not reach the tops of the receptacles, a tray that is slipped over the panel structure 162

as indicated at 70 in Figure 16 is likely assured of a flat, even supporting edge on which to rest; namely, the upper edges of the side panels.

Of course, the height of the side walls can be adapted to the needs of a particular usage for the carrier.

The materials of which the carrier of the present invention can be made need not be expensive. Ordinary, medium weight fiberboard is believed to be sufficient for most purposes. For example, it can be 0.20 S.U.S. recycled newspaper material. If waterproofing beyond the acrylic coating is necessary, a further waterproof coating can be applied on both the inside and outside surfaces.

It is within the realm of the invention also to make the carriers out of flexible plastic materials.

If desired, the carriers can be made of plastic materials that are easily washable so that the carriers can be reused.

The invention, in its various embodiments, well satisfies the objectives set forth above. The carrier is easy and quick to unfold, stands upright on its own to allow the service worker maximum utilization of his or her hands to load

food into the carrier, and provides a solid, strong, safe carrying means for both liquid and solid foods. Moreover, the invention provides a relatively large amount of exterior advertising space, and can be manufactured at a moderate cost.

In the solid-bottom version of the invention, a variety of different types of beverage or other containers can be carried, both cylindrical containers and tapered containers. Solid objects can be carried next to containers of liquid, or in the auxiliary tray attachable to the carrier.

The invention also is advantageous in that the central support panel structure is formed of hinged-together separate panels which are printed on the inside facing surfaces so that additional advertising displays can be placed on those surfaces.

The solid-bottomed embodiment can be used for carrying beverages, such as soft drinks, beer, hot or iced tea or coffee, hot soup, and many other objects other than food, such as blood or other fluids in hospitals, flower pots, cans of oil or fuel additives for automobiles or motorcycles, and, in general, a wide variety of objects which will fit into the carrier.

It should be understood that when the term "food" is used in the claims of this patent application, unless otherwise

stated, the term includes all forms of food including liquid, solid, granular, and other forms.

The above description of the invention is intended to be illustrative and not limiting. Various changes or modifications in the embodiments described may occur to those skilled in the art. These can be made without departing from the spirit or scope of the invention.